

WHAT IS CLAIMED IS:

1. An  $\alpha$ -ray measuring apparatus comprising:
  - an  $\alpha$ -ray detector including a plurality of semiconductor detectors;
  - an adder for adding output signals from said respective semiconductor detectors; and
  - a peak analyzer for analyzing an energy distribution of  $\alpha$ -rays based on the addition of the output signals of said semiconductor detectors.
2. An  $\alpha$ -ray measuring apparatus comprising:
  - an  $\alpha$ -ray detector including a plurality of semiconductor detectors arranged on a plane surface;
  - an adder for adding output signals from said respective semiconductor detectors to generate an addition output signal;
  - an anticoincidence counter for anticoincidentally counting the output signals from said respective semiconductor detectors; and
  - a peak analyzer for analyzing an energy distribution of  $\alpha$ -rays based on an addition of the output signals of semiconductor detectors which are not anticoincidentally counted.
3. An  $\alpha$ -ray measuring apparatus comprising:
  - an  $\alpha$ -ray detector including a plurality of semiconductor detectors arranged one above another;
  - an adder for adding output signals from said respective semiconductor detectors to generate an addition output signal;

an anticoincidence counter for  
anticoincidentally counting the output signals of said  
respective semiconductor detectors; and

a peak analyzer for analyzing an energy  
distribution of  $\alpha$ -rays based on an addition of the  
output signals of said respective semiconductor  
detectors which are not anticoincidentally counted.

4. An  $\alpha$ -ray measuring apparatus comprising:

an  $\alpha$ -ray detector including a plurality of  
semiconductor detectors arranged on plane surfaces  
placed one above another;

an adder associated with each plane surface  
for adding output signals from said respective  
semiconductor detectors on said associated plane  
surface to generate an addition output signal;

an anticoincidence counter for  
anticoincidentally counting the addition output signals  
of said respective sensors on said respective plane  
surfaces; and

a peak analyzer for analyzing an energy  
distribution of  $\alpha$ -rays based on the addition output  
signals from said respective semiconductor detectors on  
said respective plane surfaces which are not  
anticoincidentally counted.

5. An  $\alpha$ -ray measuring apparatus according to  
claim 1, wherein:

said anticoincidence counter anticoincidentally  
counts between an output signal of at least one of said

semiconductor detectors and output signals of the remainder of said semiconductor detectors.

6. An  $\alpha$ -ray measuring apparatus according to claim 1, further comprising a data processor for specifying an energy range to be evaluated, and for displaying the result of analysis.

7. An  $\alpha$ -ray measuring method comprising the steps of:

detecting  $\alpha$ -rays using a plurality of semiconductor detectors;

adding output signals from said respective semiconductor detectors; and

analyzing an energy distribution of the  $\alpha$ -rays based on an addition of the output signals from said semiconductor detectors.

8. An  $\alpha$ -ray measuring method comprising the steps of:

detecting  $\alpha$ -rays using a plurality of semiconductor detectors arranged on a plane surface;

adding output signals from said respective semiconductor detectors;

anticoincidentally counting the output signals from said respective semiconductor detectors; and

analyzing an energy distribution of the  $\alpha$ -rays based on an addition of the output signals from said semiconductor detectors which are not anticoincidentally countered.

9. An  $\alpha$ -ray measuring method comprising the

steps of:

detecting  $\alpha$ -rays using a plurality of semiconductor detectors arranged one above another;

adding output signals from said respective semiconductor detectors;

anticoincidentally counting the output signals of said respective semiconductor detectors; and

analyzing an energy distribution of the  $\alpha$ -rays based on an addition of the output signals from said semiconductor detectors which are not anticoincidentally countered.

10. An  $\alpha$ -ray measuring method comprising the steps of:

detecting  $\alpha$ -rays using a plurality of semiconductor detectors arranged on plane surfaces placed one above another;

adding output signals from said respective semiconductor detectors on each of said plane surfaces;

anticoincidentally counting the output signals from said respective semiconductor detectors on said respective plane surfaces; and

analyzing an energy distribution of the  $\alpha$ -rays based on an addition of the output signals from said semiconductor detectors on each of said plane surface which are not anticoincidentally countered.